20010.3961

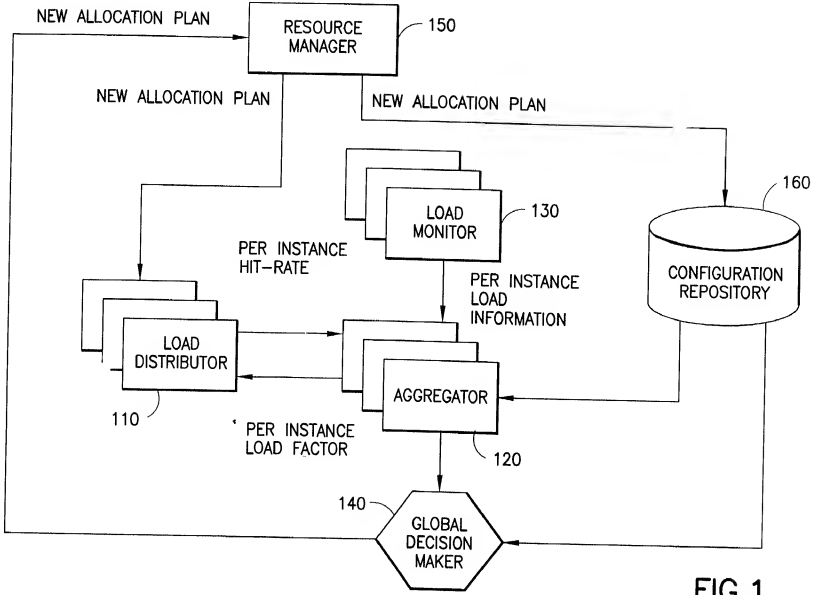


FIG. 1

2003-10-0398-2000

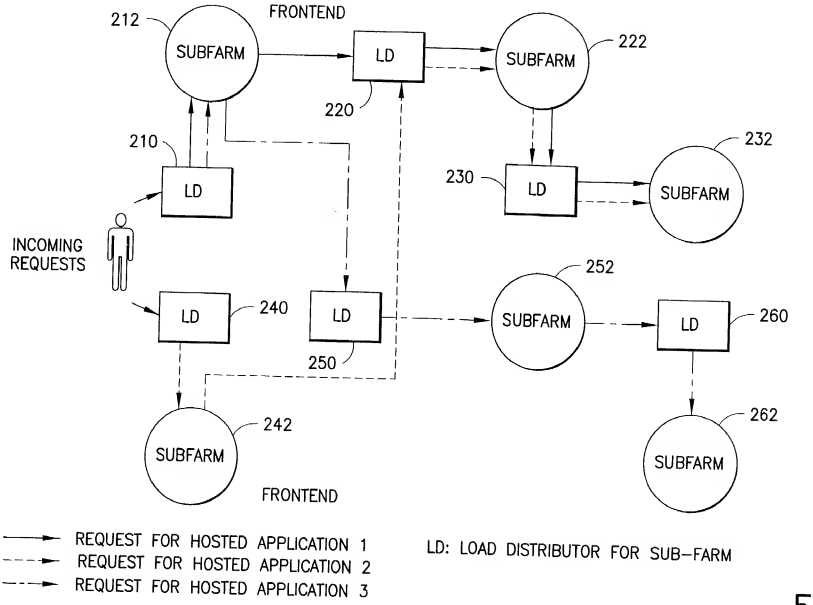


FIG.2

2001-10-09T2000

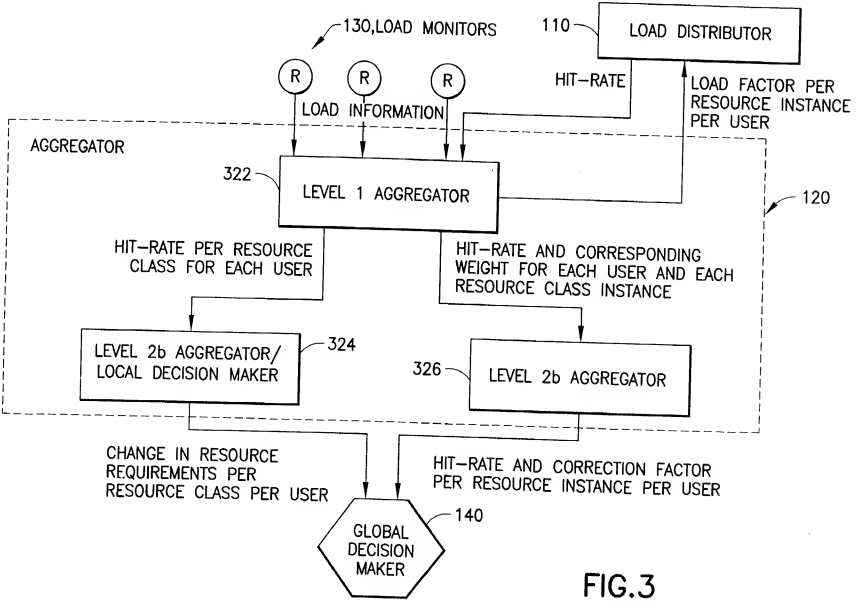
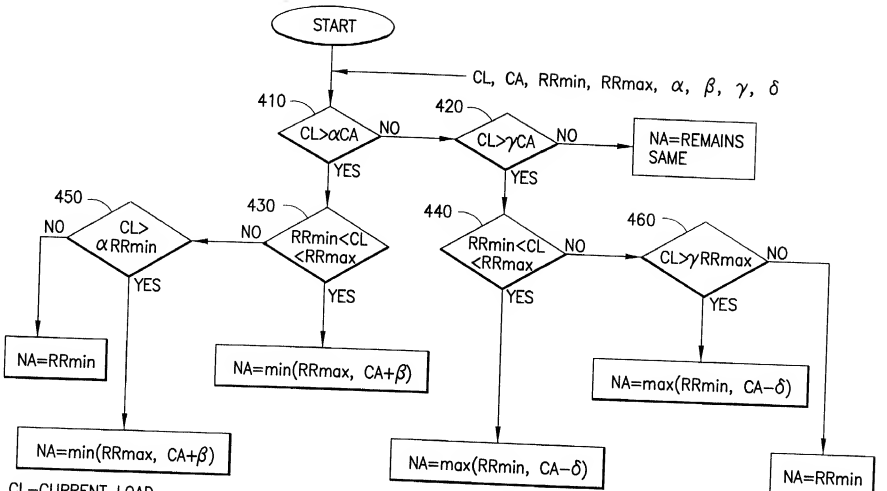


FIG.3



CL–CURRENT LOAD
CA–CURRENT ALLOCATION
NA–NEW ALLOCATION
RRmin–MINIMUM RESOURCE REQUIREMENT
RRmax–MAXIMUM RESOURCE REQUIREMENT
α, β, γ, δ –CONFIGURATION THRESHOLDS

FIG.4

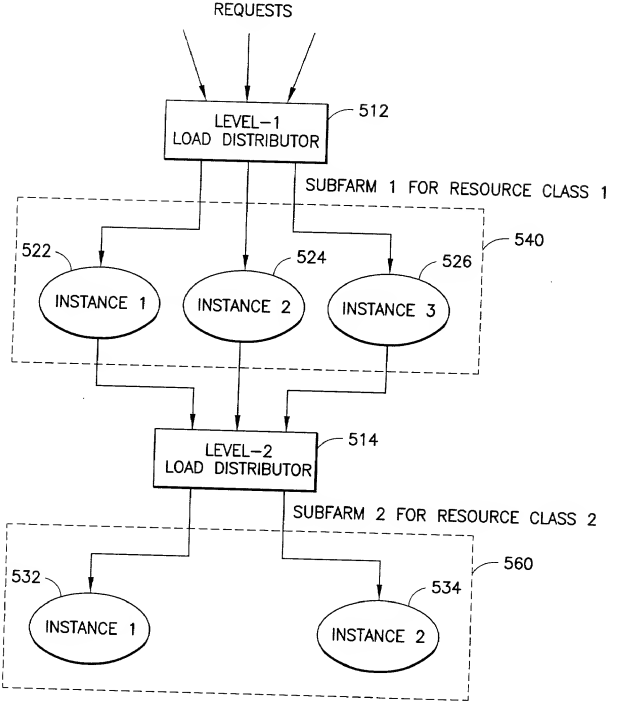

REQUESTS
LEVEL–1
LOAD DISTRIBUTOR
512
SUBFARM 1 FOR RESOURCE CLASS 1
540
522
524
526
INSTANCE 1
INSTANCE 2
INSTANCE 3
LEVEL–2
LOAD DISTRIBUTOR
514
SUBFARM 2 FOR RESOURCE CLASS 2
560
532
534
INSTANCE 1
INSTANCE 2

FIG.5

2031-10-03T12:00

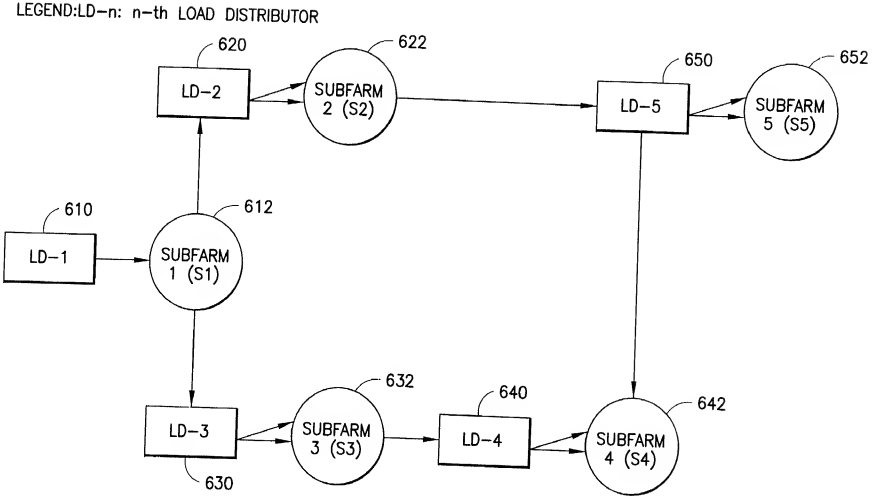


FIG.6

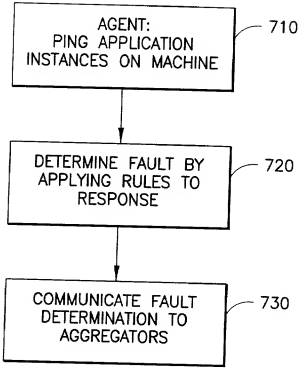

AGENT:
PING APPLICATION
INSTANCES ON MACHINE
710
DETERMINE FAULT BY
APPLYING RULES TO
RESPONSE
720
COMMUNICATE FAULT
DETERMINATION TO
AGGREGATORS
730

FIG.7A

20011008.0930

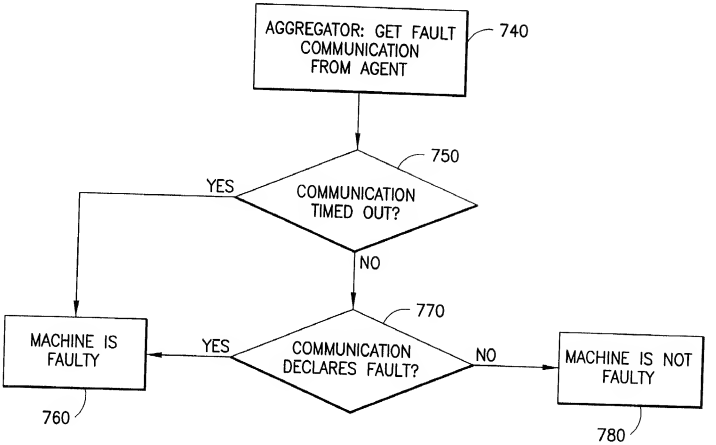


FIG.7B

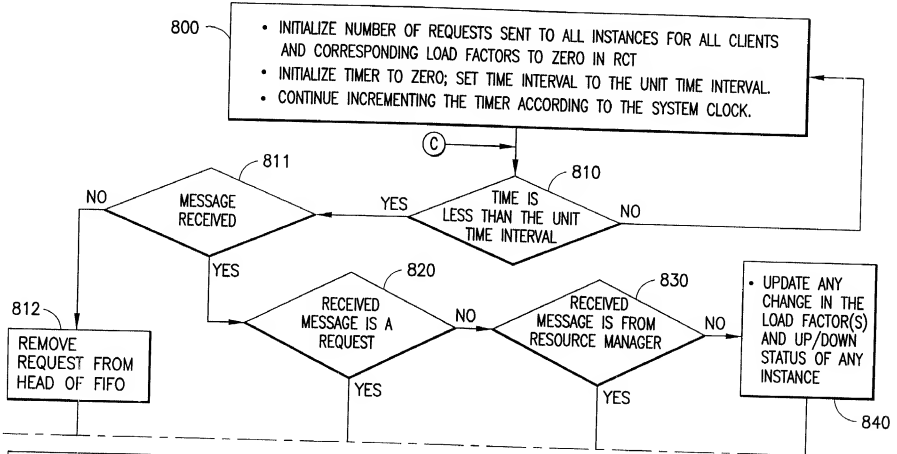


FIG.8A
FIG.8B

FIG.8

FIG.8A

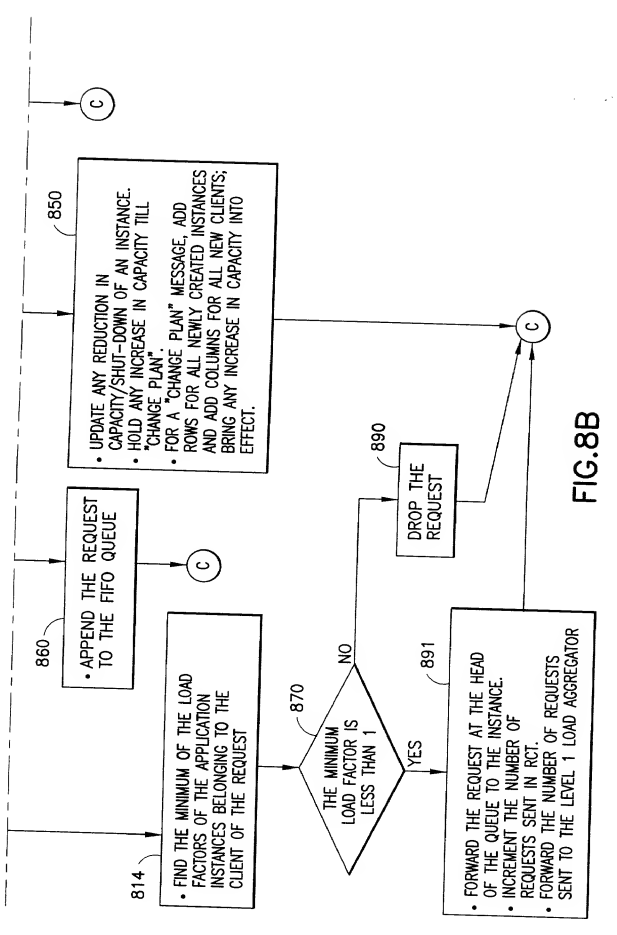

814
• FIND THE MINIMUM OF THE LOAD FACTORS OF THE APPLICATION INSTANCES BELONGING TO THE CLIENT OF THE REQUEST
870
THE MINIMUM LOAD FACTOR IS LESS THAN 1
NO
YES
860
• APPEND THE REQUEST TO THE FIFO QUEUE
C
890
DROP THE REQUEST
891
• FORWARD THE REQUEST AT THE HEAD OF THE QUEUE TO THE INSTANCE.
• INCREMENT THE NUMBER OF REQUESTS SENT IN RCT.
• FORWARD THE NUMBER OF REQUESTS SENT TO THE LEVEL 1 LOAD AGGREGATOR
850
• UPDATE ANY REDUCTION IN CAPACITY/SHUT-DOWN OF AN INSTANCE.
• HOLD ANY INCREASE IN CAPACITY TILL "CHANGE PLAN".
• FOR A "CHANGE PLAN" MESSAGE, ADD ROWS FOR ALL NEWLY CREATED INSTANCES AND ADD COLUMNS FOR ALL NEW CLIENTS; BRING ANY INCREASE IN CAPACITY INTO EFFECT.
C

FIG.8B

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SCK

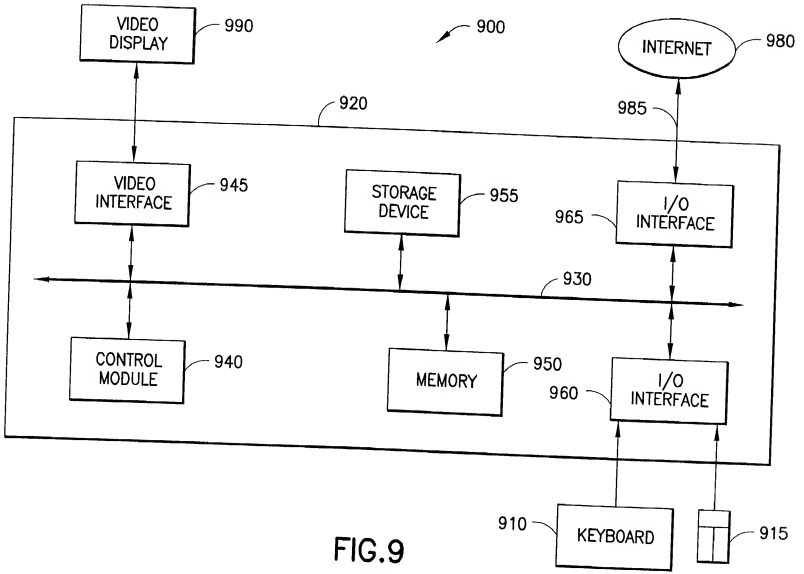

FIG.9